$F(x,y,z) = \langle xye^z, xy^2z^3, -ye^z \rangle$

$x=3 \quad y=6 \quad z=1$

$\frac{81}{2}$

$F(x,y,z) = \langle \cos z + xy^2, xe^{-z}, \sin y + x^2z \rangle$

$z = x^2+y^2 \quad z=9$

$\frac{243\pi}{2}$

$F(x,y,z) = \langle z^2x, \frac{1}{8}y^3 + \tan z, x^2z + y^2 \rangle$

$x^2+y^2+z^2=1 \quad x^2+y^2 \le 1$

$\frac{13\pi}{20}$